

What is claimed is:

1. A base deck comprising a platform portion supporting an over-mold portion, the over-mold portion comprising at least one rigid structural component and a concurrently formed elastomeric component.

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2. The base deck of claim 1, in which the platform portion includes an over-mold host region, wherein the over-mold portion encases the over-mold host region to encapsulate the over-mold host region.

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3. The base deck of claim 1, in which the platform portion comprises:
a first centrally located depression enclosing a motor mount aperture, the motor mount aperture for mounting a motor;
a second peripheral located depression adjacent the first centrally located depression confining an actuator mount aperture, the actuator mount
15 aperture for mounting an actuator;
a disc relief region adjacent the first centrally located depression, the disc relief region accommodates rotation of a disc;
a voice coil relief region adjacent the second peripheral located depression, the voice coil relief region accommodates rotation of an actuator;
20 and
a recirculation filter reception region adjacent the first centrally located depression.

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4. The base deck of claim 1, in which the over-mold portion
25 comprises:

a rigid base deck side wall with an external surface and an internal surface, the rigid base deck side wall over-molded on the platform portion;
an alignment guide formed in the rigid base deck side wall, the alignment guide confined by the external surface;
30 a filter retention finger adjacent the internal surface and supported by a recirculation filter reception region of the platform portion; and
a ramp load/unload formed on the internal surface of the rigid base deck side wall.

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5. The base deck of claim 4, in which the platform portion includes an over-mold host region, wherein the over-mold portion encases the over-mold host region to encapsulate the over-mold host region.

5 6. The base deck of claim 3, in which the over-mold portion comprises:
a rigid base deck side wall with an external surface, an internal surface and a top surface, the rigid base deck side wall over-molded on the platform portion;
10 an alignment guide formed in the rigid base deck side wall, the alignment guide confined by the external surface;
a filter retention finger adjacent the internal surface and supported by a recirculation filter reception region of the platform portion; and
a ramp load/unload formed on the internal surface of the rigid base deck
15 side wall.

7. The base deck of claim 6, in which the over-mold portion further comprises:
a top cover gasket supported by the top surface;
20 a motor gasket supported by the first centrally located depression and adjacent the motor mount aperture;
an actuator gasket supported by the second peripheral located depression and adjacent the actuator mount aperture; and
an impact dissipation member communicating with the top surface as well
25 as the external surface of the rigid base deck side wall.

8. The base deck of claim 7, in which the impact dissipation member provides the alignment guide.

30 9. The base deck of claim 8, in which the impact dissipation member, the actuator gasket, the motor gasket and the top cover gasket are formed from an epoxidized elastomer.

10. The base deck of claim 8, in which the ramp load/unload, the filter retention finger and the rigid base deck side wall are formed from a thermo-set plastic.

11. A method comprising concurrently over-molding a platform portion with a first polymer and a distinct second polymer to form a base deck.

12. The method of claim 11, in which the platform portion is a metallic
5 substrate formed by a stamping process, the first polymer is a thermo-set plastic, and the second polymer is an epoxidized elastomer.

13. The method of claim 11, in which the platform portion is a metallic
10 substrate formed by a fine blanking process, the first polymer is a thermo-set plastic, and the second polymer is an epoxidized elastomer.

14. The method of claim 11, in which the platform portion is over-
molded with the first and second polymer by steps comprising:
forming the platform portion of the base deck;
15 placing the formed platform portion in a mold cavity;
injecting the first polymer into a first recess of the mold cavity;
over-molding a rigid structural component onto the platform portion;
opening an elastomeric material gate to expose a second recess of the mold;
introducing the second polymer into the second recess;
20 over-molding an elastomeric component onto the rigid structural
component using the second distinct polymer;
removing the platform portion with the over-molded rigid structural
component and the over-molded elastomeric component from the
mold;
25 placing the platform portion with the over-molded rigid structural
component and the over-molded elastomeric component in a cure
oven; and
curing the over-molded elastomeric component to form the base deck.

30 15. The method of claim 14, in which the platform portion is a metallic
substrate formed by a stamping process, the first polymer is a thermo-set plastic,
and the second polymer is an epoxidized elastomer.

16. The method of claim 14, in which the platform portion is a metallic substrate formed by a fine blanking process, the first polymer is a thermo-set plastic, and the second polymer is an epoxidized elastomer.

5 17. The method of claim 15, in which the over-molded epoxidized elastomer component is cured at an elevated temperature in the range of 150⁰C for a period of substantially 2 hours.

10 18. The method of claim 16, in which the over-molded epoxidized elastomer component is cured at an elevated temperature in the range of 150⁰C for a period of substantially 2 hours.

19. A data storage device comprising a spindle motor assembly supported by a base deck formed by steps for concurrently over-molding a platform portion with a first polymer and a distinct second polymer.

- 5 20. The data storage device of claim 19, in which the base deck comprises:
- a platform portion with a plurality of mounting apertures, each mounting apertures formed to operably receive a corresponding mechanical component of the data storage device;
 - 10 a rigid base deck side wall over-molded on the platform portion;
 - an alignment guide formed in the rigid base deck side wall, the alignment guide confined by an external surface of the rigid base deck side wall;
 - a ramp load/unload formed on an internal surface of the rigid base deck
 - 15 side wall;
 - a plurality of gaskets correspondingly formed adjacent each mounting aperture, each of the plurality of gaskets precluding particle migration into an internal portion of the data storage device;
 - an impact dissipation member formed adjacent with a top surface as well as
 - 20 the external surface of the rigid base deck side wall.

21. The data storage device of claim 19, in which the steps for over-molding a platform portion with a first polymer and a second distinct polymer comprise:

- 25 forming the platform portion of the base deck;
- placing the formed platform portion in a mold cavity;
 - injecting the first polymer into a first recess of the mold cavity;
 - over-molding a rigid structural component onto the platform portion;
 - opening an elastomeric material gate to provide a second recess of the
 - 30 mold;
 - introducing the second distinct polymer into the second recess;
 - over-molding an elastomeric component onto the rigid structural component using the second distinct polymer;

removing the platform portion with the over-molded rigid structural component and the over-molded elastomeric component from the mold;

placing the platform portion with the over-molded rigid structural component and the over-molded elastomeric component in a cure oven; and

curing the over-molded elastomeric component to form the base deck.

10 22. The method of claim 21, in which the platform portion is a metallic substrate formed by a stamping process, the first polymer is a thermo-set plastic, and the second distinct polymer is an epoxidized elastomer.

15 23. The method of claim 21, in which the platform portion is a metallic substrate formed by a fine blanking process, the first polymer is a thermo-set plastic, and the second distinct polymer is an epoxidized elastomer, wherein the epoxidized elastomer component is cured at an elevated temperature in the range of 150⁰C for a period of substantially 2 hours.

20 24. The method of claim 22, in which the epoxidized elastomer component is cured at an elevated temperature in the range of 150⁰C for a period of substantially 2 hours.

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